

CLAIMS

1. Device for protecting an electrical source capable of powering at least one
5 electrical component (4), characterized in that it comprises a test unit (6) capable of delivering a signal (8) representative of the level of availability of the electrical source (2) to a control unit (10), this control unit
10 (10) determining an operating mode of the electrical component (4) in which the consumption of electrical energy of the latter depends on the availability signal (8) received from the control unit (6).

15 2. Protection device according to Claim 1, characterized in that the electrical source (2) powers the electrical component (4) directly and in that the control unit (10) acts on the electrical component (4) itself in such a way as
20 to limit the quantity of electrical energy that the latter requests from the electrical source (2) for its operation.

3. Protection device according to Claim 1, characterized in that the control unit (10) is
25 interposed between the electrical source (2) and the electrical component (4), and in that the control unit (10) modifies at least one characteristic of the electric current which supplies the electrical component (4) in such a
30 way as to limit the quantity of energy supplied to the electrical component by the electrical source (2).

4. Protection device according to Claim 3, characterized in that the control unit (10)
35 consists of an inverter (12), capable of applying an electric current of variable frequency to the electrical component (4), and of a control circuit (20) of the inverter (12), this circuit comprising an assembly of resistors (28)

interposed between a ground terminal (22) and a maximum voltage terminal (24) of the inverter, the assembly of resistors (28) having a plurality of connection terminals (32, 36, 50, 52) capable of being connected to an intermediate terminal (26) of the inverter (12) via a control line (62) provided with adjustment means (60), the availability signal (8) delivered by the test unit (6) being supplied to the adjustment means (60) such that it connects the intermediate terminal (26) of the inverter to a connection terminal (32, 36, 50, 52) of the assembly of resistors (28) determined according to the availability signal (8).

5. Protection device according to any one of Claims 1 to 4, characterized in that the assembly of resistors (28) consists of a divider bridge that comprises a plurality of resistors (44, 46, 48) determining connection terminals (32, 36, 50, 52) between them and at their ends, the adjustment means (60) connecting the control line (62) to one of these connection terminals (32, 36, 50, 52) according to the availability signal (8).

6. Protection device according to Claim 5, characterized in that the divider bridge comprises two resistors (44, 46) determining between them a node (50), and in that the adjustment means (60) comprise a first switch (70) having a normal operating position in which the control line (62) is connected directly or by the intermediary of a protective resistor (40) to the maximum voltage terminal (24) of the inverter (12) in order to allow a normal operating mode of the electrical component (4), and a degraded operation position in which the control line (62) is connected to the node (50) of the divider bridge in order to allow a degraded operating mode of the electrical component (4), and by a

- 17 -

second switch (72) having a closed position in which the control line (62) is connected to the ground terminal (22) of the inverter (12) in order to prohibit the operation of the electrical component.

7. Control device according to Claim 6, characterized in that the assembly of resistors (28) comprises a potentiometer (90) having its end terminals (32, 50) directly or indirectly connected to the maximum voltage terminal (24) and to the ground terminal (22) of the inverter, and a slider terminal (92) connected to the intermediate terminal (26) of the inverter by the intermediary of the first switch (70) when the latter is in its closed position, and in that it furthermore comprises a manual control (94) adjustable by an operator and capable of controlling the potentiometer (90) directly or indirectly.

8. Control device according to Claim 7, characterized in that the two resistors (44, 46) of the divider bridge (28) are separate from the potentiometer (90).

9. Control device according to Claim 7, characterized in that the potentiometer (90) constitutes one of the two resistors (44, 46) of the divider bridge.

10. Control device according to one of Claims 7 to 9, characterized in that the electrical component is an electric motor (4) driving a compressor of an air-conditioning system and in that the manual control (94) is capable of obtaining a continuous adjustment of the speed of the motor between a minimum speed corresponding to a "warmest" mode and a maximum speed corresponding to a "coolest" mode.